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Charting Experience Categories for Museum Exhibitions

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Abstract. In this poster, we chart and identify user experience categories with museum experiences. The experience categories were searched from narratives people provided in a survey-based user study (n = 48), where people reflected their positive and negative experiences, technology use and possible ethical concerns in museum exhibitions they had visited. Cultural heritage is a special design domain, as it can involve not only fragile old materials but also cultural sensitivities related to the events in history. The paper highlights the role of interactivity and multi-sensory experiences in museums, and our research contributes background knowledge for designers and practitioners working with museum exhibits.

Keywords: Cultural heritage · User experience · Museums · Experience design · Design sensitivities

1 Introduction

There has been a vast HCI research on cultural heritage [4], and prior art has presented a great number of examples how interactive technologies can be applied to museum exhibitions. It has been regarded that in general, interactive technologies can enhance museum experiences (e.g. [5]) and enable new ways of story-telling and experiencing the exhibitions [7].

In our research, we seek to dig deeper in understanding the user experience elements of museum exhibitions. Whereas most of the prior art has focused on single installations or exhibitions, we wish to take a more general approach, charting the experiences that people have had in museums, and analyse and identify the experience categories that can be found. We are interested in how people remember technology in relation to their visits to the museums. We also seek to gain more understanding about the ethics and cultural sensitivities with the museum experiences from the visitor viewpoint, as it is important that designers pay attention to those issues in the cultural heritage design context [2].

User experience is defined by Hassenzahl as "a momentary, primarily evaluative feeling (good-bad) while interacting with a product or service" [3]. His definition highlights the user's subjective experience and feelings, instead of focusing

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on the product. In the big picture of ubiquitous computing research, studies addressing the user experience design are still scarce [9]. Nikolakopoulou and Koutsabasis present a review of UX research conducted on interactive systems with cultural heritage [4], but they do not seek to identify experience categories.

2 Online Survey

In order to chart the experiences with museum visits, we organised an online survey. A similar approach of collecting written experience narratives has been user earlier [6]. The online survey consisted of four different parts. In the first part, it collected background information of the participants as age, gender and how often one would visit museums before COVID-19 pandemic and restric-tions. Second section had open ended questions related to a memorable museum experience (2A) and the use of technologies (2B). The third section asked if any museum exhibition had made participants think about ethical issues. In the fourth section the participants could choose five adjectives that presented for them the most desired museum experience. We used Desmet's framework for product experience categories for the options [1]. The open ended questions of the survey were coded in three cycles [8] and the codes created were discussed in peer-review style meetings. Two researchers coded the answers separately and a third researcher analysed these answers and gave a final code.

In total 48 people participated, 62% women, 27% men and 11% other/did not wish to answer. The largest age group was 26–35 years (42%) then and 36–45 years with 21% of the answers. Largest part of the people 46%, selected that they visit museums 1–4 times per year, 21% answered 5–8 times per year and 19% answered that they visit less often than once per year.

3 Findings

Memorable Museum Experiences. In the second Sect. 2A participants described a memorable museum experience and told what made it a positive or a negative experience. The codes in the Fig. 1 show how these experience in the order of importance visual aspect (33), sense of realisation or impact (16), participation (11), immersion (10), technology (7) and social aspect (6). Issues relating to senses as touch (4), auditory (3) and smell (0) were not often recognised. Majority found the experiences positive (36) and the ones that felt it was negative (5) often had a visit to a museums with a sensitive historical context as a mental hospital or a concentration camp.

Technology Enhancing Museums Experiences. In the second Sect. 2B participants described how technologies had enhanced their museum experience. The most mentioned categories were auditory experiences as headphones or sound (16), interactivity (13), films (12) and technological installations (9). One participant described the experience as follows: "*The technology was a seamless*

part of the exhibition. It didn't feel like it was added simply because they wanted to use technology. It helped to create the mood for the exhibition" (#26). Most felt that the experience had been positive (31) and only few as negative (4). The reasons for being negative was similar as in the previous question.

Ethical Themes. In the third section the participants described what ethical issues the exhibitions have raised from their perspective. Majority was worried about how vulnerable groups are being treated (8), unethically acquired pieces as the ones stolen in the colonial times (7), political orientation (7), death (6) and indigenous peoples issues (5). Only some were disturbed about the other people's behaviour in the museum, like disrespecting the sensitive museum exhibition pieces such as mummies (#20).

2A) Memorable museum experience		2B) How technology has enhanced a museum experience		3) Themes concerning ethics	
Visual / Seeing / Lighting	33	Headphones / Sound	16	Vulnerable groups	8
Impact / Realization	16	Interactive (like Kinect)	13	Unethically adquired pieces	7
Activity / Creating / Participating	11	Film / Video / Monitor / Projection	12	Political orientation	7
Immersion / Other World	10	Technological installation	9	Death	6
Technology	7	Augmented reality	5	Indigenous	5
Social Aspect	6	Virtual reality	3	War	4
Touch	4	Game with technology (like Wii)	3	Visitors' disrecpectful behaviour	3
Auditory / Hearing / Sound / Music	3	Light	3	Recognition of people	1
Smell	0				

Fig. 1. Three coded categories with the number of times it was discussed in the survey.

Desired User Experience. In the fourth section, where people had to choose five most desired museum experience emotions, the top five categories selected the most were Inspiration (41), Curiosity (39), Fascination (38), Admiration (23), Astonishment (18). The six least selected ones were Boredom (0), Alarm (1), Irritation (1), Jealousy (1), Contempt (1), Softened (1). People mentioned how these categories depend on the museum and topic, so they are not universal and static (#38). In some cases respondents reported that negative feelings could help to have a deeper understanding of a topic (#37).

4 Discussion

The experiences reported by the participants seem to go much with the traditional ways of experiences the museums pieces as the visual aspect gained most codes. None of the participants reported smell in their museum experiences, but this might be explained by it being rarely used in museums. Using the sense of smell in museums could be an interesting topic for future research. Touch was also another sensory aspect not much covered, but visual and auditory experiences were raised more, as they are most often used in many exhibitions. Many of the experiences (11) mentioned participating to an activity, such as creating something or a physical experience. Sound was one of the most mentioned when

it comes to using technologies, as many museums have ambient sounds or audio guides, which many people found enjoyable, as it allowed them to feel immersed to the environment (#15) and feel autonomy and explore more content (#34).

On the basis of the results a lot of the positive museum experience descriptions (10) featured immersion, fantasy world or dream world. One participant described experience as follows "*It felt like I was in a dreamworld. It did not feel negative, the sensation was that it was surreal*" (#5). The results highlight that the museum experiences can have a long lasting impact, as one participant remembered an experience from when they were 7 years old (#26). Perhaps these immersive multi-sensory experiences at museums that have the possibility a to transfer the visitor to another world are a contrast to our everyday life.

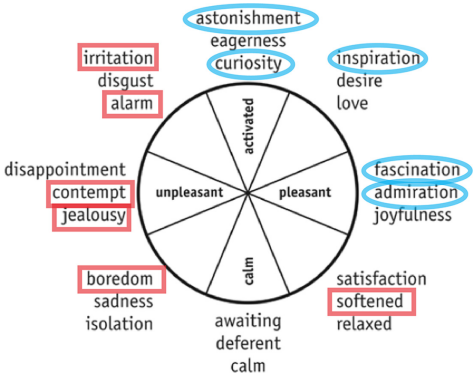

Fig. 2. The top 5 selected (blue circles) and the 6 least selected emotions (red boxes) added on Desmet's (2007) model, which was adapted from Russel's (1980) model.

Interactivity was another theme that raised by the visitors when describing a memorable museums experience and another with technology. The results confirm the previous research how technology is used to enhance the experience (e.g. [5]). When placed to Desmet's core affect model [1], the most desired museum experiences from the survey are positioned to the pleasant and activated axles, as can be seen in Fig. 2. The least selected emotions were spread out to either unpleasant the calm sectors, or combinations. Thus we can see how the results from the open ended questions and from the selection of adjectives emphasize the active or interactive participation of the visitor.

This study also confirms how ethical issues should be also considered when designing in the museums in order to create a positive experience for the visitor also in sensitive contexts [2]. Each of the different themes presented in this paper could offer topics to research separately as well. Other types of existing emotion and experience frameworks could be used for a similar study for comparison.

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